

(19) World Intellectual Property Organization  
International Bureau



JUL 2004

(43) International Publication Date  
28 August 2003 (28.08.2003)

PCT

(10) International Publication Number  
**WO 03/071588 A1**

(51) International Patent Classification<sup>7</sup>: **H01L 21/02**,  
B24C 1/00, C30B 29/36, H01L 21/205

(21) International Application Number: PCT/JP03/00175

(22) International Filing Date: 10 January 2003 (10.01.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
2002-45725 22 February 2002 (22.02.2002) JP

(71) Applicant (for all designated States except US): **MIT-SUI ENGINEERING & SHIPBUILDING CO., LTD.** [JP/JP]; 6-4, Tsukiji 5-chome, Chuo-ku, Tokyo 104-8439 (JP).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **YAMADA, Isao** [JP/JP]; 6-11-9, Honmachi Shinzaike, Himeji-shi, Hyogo 670-0092 (JP). **MATSUO, Jiro** [JP/JP]; 91-3, Nagatani-cho, Iwakura, Sakyo-ku, Kyoto-shi, Kyoto

606-0026 (JP). **TOYODA, Noriaki** [JP/JP]; 3-6-205, Higashi-Tsujii 1-chome, Himeji-shi, Hyogo 670-0084 (JP). **MURATA, Kazutoshi** [JP/JP]; c/o MITSUI ENGINEERING & SHIPBUILDING CO., LTD. Tamano Works, 1-1, Tama 3-chome, Tamano-shi, Okayama 706-8651 (JP). **MIYATAKE, Naomasa** [JP/JP]; c/o MITSUI ENGINEERING & SHIPBUILDING CO., LTD. Tamano Works, 1-1, Tama 3-chome, Tamano-shi, Okayama 706-8651 (JP).

(74) Agents: **MURAKAMI, Tomokazu** et al.; 4th Floor, Tsubaki Bldg., 10-2, Nishi-Ikebukuro 5-chome, Toshima-ku, Tokyo 171-0021 (JP).

(81) Designated States (national): KR, US.

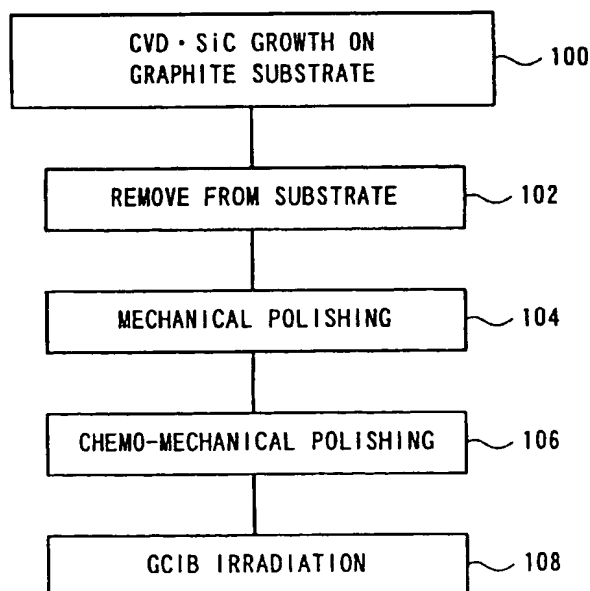
(84) Designated States (regional): European patent (DE, FR, SE).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PRODUCTION METHOD OF SiC MONITOR WAFER



(57) Abstract: The present invention has its object to obtain an SiC monitor wafer which can flatten the surface until particle detection is possible. SiC of a crystal system 3C is deposited on a substrate by a CVD (Chemical Vapor Deposition) method, and the SiC is detached from a substrate. After the SiC surface is flattened by using mechanical polishing alone or in combination with CMP (Chemo Mechanical Polishing), GCIB (Gas Cluster Ion Beam) is irradiated to the surface until the surface roughness becomes Ra = 0.5 nm or less and the impurity density of the wafer surface becomes  $1 \times 10^{11}$  atoms / cm<sup>2</sup> or less to produce the SiC monitor wafer.

WO 03/071588 A1